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BEFORE THE ARIZONA CORPORATION COMMISSION

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AZ CORP COMMISSION
DOCKET CONTROL

COMMISSIONERS

SUSAN BITTER SMITH - Chairman
BOB STUMP
BOB BURNS
DOUG LITTLE
TOM FORESE

IN THE MATTER OF THE APPLICATION OF
LIBERTY UTILITIES (BLACK MOUNTAIN
SEWER) CORP., AN ARIZONA
CORPORATION, FOR AUTHORITY TO
ISSUE EVIDENCE OF INDEBTEDNESS IN
AN AMOUNT NOT TO EXCEED \$3,400,000.

DOCKET NO. SW-02361A-15-0206

IN THE MATTER OF THE APPLICATION OF
LIBERTY UTILITIES (BLACK MOUNTAIN
SEWER) CORP., AN ARIZONA
CORPORATION, FOR A DETERMINATION
OF THE FAIR VALUE OF ITS UTILITY
PLANTS AND PROPERTY AND FOR
INCREASES IN ITS WASTEWATER RATES
AND CHARGES FOR UTILITY SERVICE
BASED THEREON.

DOCKET NO. SW-02361A-15-0207

**STAFF'S NOTICE OF FILING
FINANCING AND COST OF CAPITAL
SCHEDULES TO DIRECT TESTIMONY**

The Utilities Division ("Staff") of the Arizona Corporation Commission
("Commission") hereby files the Financing and Cost of Capital Schedules to the Direct Testimony of
Staff witness Crystal S. Brown, which were inadvertently omitted from Staff's December 2, 2015
Direct Testimony filing, in the above-captioned matter.

RESPECTFULLY SUBMITTED this 3rd day of December, 2015.

Robin Mitchell
Wesley Van Cleve
Attorneys, Legal Division
Arizona Corporation Commission
1200 West Washington Street
Phoenix, Arizona 85007
(602) 542-3402

Original and thirteen (13) copies of the
foregoing filed this 3rd day of December,
2015 with:

Docket Control
Arizona Corporation Commission
1200 West Washington Street
Phoenix, Arizona 85007

Arizona Corporation Commission
DOCKETED

DEC 03 2015

DOCKETED BY

1 Copy of the foregoing **EMAILED ONLY**
2 this 3rd day of December, 2015, to:

3 Jay L. Shapiro
4 SHAPIRO LAW FIRM, P.C.
5 1819 E. Morten Avenue, Suite 280
6 Phoenix, Arizona 85020
7 jay@shaplawaz.com
8 whitney@shaplawaz.com
9 Attorney for Liberty Utilities

10 Todd C. Wiley
11 Assistant General Counsel
12 LIBERTY UTILITIES
13 12725 West Indian School Road, Suite D101
14 Avondale, Arizona 85392-9524
15 todd.wiley@libertyutilities.com

16 Copy of the foregoing **MAILED ONLY**
17 this 3rd day of December, 2015 to:

18 Daniel W. Pozefsky
19 Residential Utility Consumer Office
20 1110 West Washington Street, Suite 220
21 Phoenix, Arizona 85007

22 Michele Van Quathem
23 RYLEY CARLOCK & APPLEWHITE
24 One North Central Avenue, Suite 1200
25 Phoenix, AZ 85004-4417
26 Attorneys for CP Builders, LLC

27 Scott S. Wakefield
28 RIDENOUR HIENTON, PLLC
201 N. Central Ave., Suite 3300
Phoenix, AZ 85004
Attorneys for the Town of Carefree

Michael W. Wright
SHERMAN & HOWARD, LLC
7033 E. Greenway Pkwy, Suite 250
Scottsdale, AZ 85254
Attorneys for the Town of Carefree

Gary S. Neiss
Town of Carefree
100 Easy Street
PO Box 740
Carefree, AZ 85377

Monica A. Neiss

Direct Testimony for Crystal Brown
Financing Schedules

FINANCIAL ANALYSIS

Selected Financial Information
Pro forma Includes Immediate Effects of the Proposed Long-term Debt

		[A]			[B]
		12/31/2014			12/31/2014
		Staff Recommended Revenue			Staff Recommended Revenue
		<u>Without Loan</u>			<u>Full Amount of Proposed Loan</u>
1	Operating Income	\$ 222,309			\$ 222,309
2	Depreciation & Amortization Expens	\$ 377,132			\$ 377,132
3	Income Tax Expense	\$ 109,830			\$ 109,830
4	Interest Expense on Debt	\$ -			\$ 115,380
5	Repayment of Principal	\$ -			\$ 288,648
TIER					
6	[1+3] ÷ [4]	Non Applicable			2.88
DSC					
7	[1+2+3] ÷ [4+5]	Non Applicable			1.76
8	Short-term Debt	\$ 3,628	1.61%	\$ 292,276 (a)	8.06%
9	Long-term Debt	\$ 89,535	39.61%	\$3,200,886	88.28%
10	Equity	\$ 132,861	58.78%	\$ 132,861	3.66%
11	Total Capital	\$ 226,024	100.00%	\$3,626,024	100.00%

(a) Includes \$0 in short-term debt and \$292,276 in current maturities on long-term debt and first year principal repayment on the full amount of the proposed loan.

Liberty Utilities (Black Mountain Sewer) Corp.
Docket No. SW-02361A-15-0207
Application For Financing

Schedule CSB-2

Loan Amount Requested	\$3,400,000		
Down Payment:	\$0		
Amount Financed:	\$3,400,000		
Number of years:	10	Compounding Periods:	12
Interest rate (r):	3.53%	APR:	3.59%

LOAN AMORTIZATION SCHEDULE

Period	Loan payment (1)	Beginning- of-month principal (2)	Payments		End-of-month principal [(2) - (4)] (5)	Annual Interest (6)	Annual Principal (7)	Annual Debt Payment (8)
			Interest [r * (2)] (3)	Principal [(1) - (3)] (4)				
1	\$33,669.00	\$3,400,000.00	\$10,001.67	\$23,667.33	\$3,376,332.67			
2	33,669.00	3,376,332.67	9,932.05	23,736.95	3,352,595.72			
3	33,669.00	3,352,595.72	9,862.22	23,806.78	3,328,788.94			
4	33,669.00	3,328,788.94	9,792.19	23,876.81	3,304,912.13			
5	33,669.00	3,304,912.13	9,721.95	23,947.05	3,280,965.08			
6	33,669.00	3,280,965.08	9,651.51	24,017.49	3,256,947.59			
7	33,669.00	3,256,947.59	9,580.85	24,088.14	3,232,859.45			
8	33,669.00	3,232,859.45	9,509.99	24,159.00	3,208,700.45			
9	33,669.00	3,208,700.45	9,438.93	24,230.07	3,184,470.38			
10	33,669.00	3,184,470.38	9,367.65	24,301.35	3,160,169.03			
11	33,669.00	3,160,169.03	9,296.16	24,372.83	3,135,796.20			
12	33,669.00	3,135,796.20	9,224.47	24,444.53	3,111,351.67	115,379.63	288,648.33	404,027.96

Direct Testimony for Crystal Brown
Cost of Capital Schedules

Liberty Utilities (Black Mountain Sewer), Corp. Cost of Capital Calculation
 Capital Structure
 And Weighted Average Cost of Capital
 Staff Recommended and Company Proposed

[A]	[B]	[C]	[D]
<u>Description</u>	<u>Weight (%)</u>	<u>Cost</u>	<u>Weighted Cost</u>
Staff Recommended Capital Structure			
Debt	30.0%	3.53%	1.06%
Common Equity	70.0%	8.60%	<u>6.02%</u>
Weighted Average Cost of Capital			7.08%
Company Proposed Capital Structure			
Debt	30.00%	3.53%	1.06%
Common Equity	70.00%	10.80%	<u>7.56%</u>
Weighted Average Cost of Capital			8.62%
[D] : [B] x [C] Supporting Schedules: CSB-3 and CSB-4.			

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Liberty Utilities (Black Mountain Sewer), Corp. Cost of Capital Calculation
Final Cost of Equity Estimates
Sample Water Utilities

[A]	[B]	[C]	[D]	[E]
<u>DCF Method</u>				
Constant Growth DCF Estimate		$\frac{D_1}{P_0}^1$	+	g_c^2
Multi-Stage DCF Estimate		2.7%	+	5.5%
Average DCF Estimate				=
				8.2%
				<u>9.0%</u>
				8.6%
<u>CAPM Method</u>				
Historical Market Risk Premium ³	<u>Rf</u>	+	β^3	\times
Current Market Risk Premium ⁴	2.1%	+	0.73	\times
Average CAPM Estimate	2.9%	+	0.73	\times
				9.2%
				=
				7.6%
				<u>9.5%</u>
				8.6%
Staff's Estimated Cost of Equity				
Economic Assessment Adjustment				
Sub-Total				
Financial Risk Adjustment				
Total				
				8.6%
				<u>0.0%</u>
				8.6%
				<u>0.0%</u>
				8.6%

- 1 MSN Money and Value Line
- 2 Schedule JAC-8
- 3 Risk-free rate (Rf) for 5, 7, and 10 year Treasury rates from the U.S. Treasury Department at www.ustreas.gov
- 4 Risk-free rate (Rf) for 30 Year Treasury bond rate from the U.S. Treasury Department at www.ustreas.gov
- 5 Value Line
- 6 Historical Market Risk Premium (Rp) calculated from 2015 Ibbotson SBBI Classic Yearbook data
- 7 Testimony

Liberty Utilities (Black Mountain Sewer), Corp. Cost of Capital Calculation
Average Capital Structure of Sample Water Utilities

[A]	[B]	[C]	[D]
<u>Company</u>	<u>Debt</u>	<u>Common Equity</u>	<u>Total</u>
American States Water	38.7%	61.3%	100.0%
California Water	45.9%	54.1%	100.0%
Aqua America	50.3%	49.7%	100.0%
Connecticut Water	45.6%	54.4%	100.0%
Middlesex Water	44.3%	55.7%	100.0%
SJW Corp	54.7%	45.3%	100.0%
York Water	<u>43.4%</u>	<u>56.6%</u>	<u>100.0%</u>
 Average Sample Water Utilities	 46.1%	 53.9%	 100.0%
 Black Mountain	 30.00%	 70.00%	 100.0%

Source:

Sample Water Companies from Value Line

Liberty Utilities (Black Mountain Sewer), Corp. Cost of Capital Calculation
Growth in Earnings and Dividends
Sample Water Utilities

[A]	[B]	[C]	[D]	[E]
	Dividends Per Share 2005 to 2014	Dividends Per Share Projected	Earnings Per Share 2005 to 2014	Earnings Per Share Projected
<u>Company</u>	<u>DPS¹</u>	<u>DPS¹</u>	<u>EPS¹</u>	<u>EPS¹</u>
American States Water	6.4%	6.7%	11.6%	6.5%
California Water	1.4%	8.3%	5.0%	5.4%
Aqua America	7.8%	9.7%	8.9%	6.6%
Connecticut Water	1.9%	5.2%	5.2%	3.2%
Middlesex Water	1.4%	2.3%	4.5%	3.6%
SJW Corp	3.9%	1.3%	8.5%	NA
York Water	<u>3.9%</u>	<u>6.7%</u>	<u>6.1%</u>	<u>5.3%</u>
 Average Sample Water Utilities	 3.8%	 5.7%	 7.1%	 5.1%

1 Value Line

Liberty Utilities (Black Mountain Sewer), Corp. Cost of Capital Calculation
Sustainable Growth
Sample Water Utilities

[A]	[B]	[C]	[D]	[E]	[F]
	Retention Growth 2005 to 2014 <u>br</u>	Retention Growth Projected <u>br</u>	Stock Financing Growth <u>vs</u>	Sustainable Growth 2005 to 2014 <u>br + vs</u>	Sustainable Growth Projected <u>br + vs</u>
<u>Company</u>					
American States Water	4.6%	7.0%	1.6%	6.3%	8.6%
California Water	2.9%	3.6%	1.2%	4.0%	4.8%
Aqua America	4.3%	5.7%	1.2%	5.5%	6.8%
Connecticut Water	2.3%	4.1%	2.9%	5.2%	7.0%
Middlesex Water	1.6%	3.6%	1.7%	3.3%	5.3%
SJW Corp	4.0%	4.2%	0.9%	4.9%	5.1%
York Water	<u>2.4%</u>	<u>3.8%</u>	<u>2.6%</u>	<u>5.0%</u>	<u>6.5%</u>
Average Sample Water Utilities	3.1%	4.6%	1.7%	4.9%	6.3%

[B]: Value Line

[C]: Value Line

[D]: Value Line, Yahoo Finance, and Form 10-Ks filed with the Securities and Exchange Commission (<http://www.sec.gov/>)

[E]: [B] + [D]

[F]: [C] + [D]

Liberty Utilities (Black Mountain Sewer), Corp. Cost of Capital Calculation
Selected Financial Data of Sample Water Utilities

[A] [B] [C] [D] [E] [F] [G]

<u>Company</u>	<u>Symbol</u>	<u>Spot Price</u> <u>11/4/2015</u>	<u>Book Value</u>	<u>Mkt To</u> <u>Book</u>	<u>Value Line</u> <u>Beta</u>	<u>Raw</u> <u>Beta</u>
American States Water	AWR	40.89	13.72	3.0	0.70	0.52
California Water	CWT	22.67	13.28	1.7	0.75	0.60
Aqua America	WTR	29.26	9.39	3.1	0.75	0.60
Connecticut Water	CTWS	36.76	20.87	1.8	0.65	0.45
Middlesex Water	MSEX	25.24	12.48	2.0	0.75	0.60
SJW Corp	SJW	31.21	17.05	1.8	0.75	0.60
York Water	YORW	23.04	8.59	<u>2.7</u>	<u>0.75</u>	<u>0.60</u>
Average				2.3	0.73	0.57

[C]: Msn Money

[D]: Value Line

[E]: [C] / [D]

[F]: Value Line

[G]: $(-0.35 + [F]) / 0.67$

Liberty Utilities (Black Mountain Sewer), Corp. Cost of Capital Calculation
Calculation of Expected Infinite Annual Growth in Dividends
Sample Water Utilities

[A]	[B]
<u>Description</u>	<u>g</u>
DPS Growth - Historical ¹	3.8%
DPS Growth - Projected ¹	5.7%
EPS Growth - Historical ¹	7.1%
EPS Growth - Projected ¹	5.1%
Sustainable Growth - Historical ²	4.9%
<u>Sustainable Growth - Projected²</u>	<u>6.3%</u>
Average	5.5%

1 Schedule CSB-5

2 Schedule CSB-6

Liberty Utilities (Black Mountain Sewer), Corp. Cost of Capital Calculation
Multi-Stage DCF Estimates
Sample Water Utilities

[A]	[B]	[C]	[D]	[E]	[F]	[G]	[H]
<u>Company</u>	Current Mkt. Price (P_0) ¹ 11/4/2015	Projected Dividends ² (Stage 1 growth) (D_t)				Stage 2 growth ³ (g_n)	Equity Cost Estimate (K) ⁴
		d ₁	d ₂	d ₃	d ₄		
American States Water	40.9	0.90	0.95	1.00	1.05	6.4%	8.6%
California Water	22.7	0.67	0.71	0.75	0.79	6.4%	9.3%
Aqua America	29.3	0.70	0.74	0.78	0.82	6.4%	8.8%
Connecticut Water	36.8	1.08	1.14	1.20	1.27	6.4%	9.3%
Middlesex Water	25.2	0.77	0.81	0.86	0.90	6.4%	9.4%
SJW Corp	31.2	0.78	0.83	0.87	0.92	6.4%	8.9%
York Water	23.0	0.60	0.63	0.67	0.70	6.4%	9.0%

$$P_0 = \sum_{t=1}^n \frac{D_t}{(1+K)^t} + \frac{D_n(1+g_n)}{K-g_n} \left[\frac{1}{(1+K)} \right]^n$$

Average 9.0%

Where : P_0 = current stock price
 D_t = dividends expected during stage 1
 K = cost of equity
 n = years of non – constant growth
 D_n = dividend expected in year n
 g_n = constant rate of growth expected after year n

1 [B] see Schedule CSB-7

2 Derived from Value Line Information

3 Average annual growth in GDP 1929 - 2012 in current dollars.

4 Internal Rate of Return of Projected Dividends

Liberty Utilities (Black Mountain Sewer), Corp. Cost of Capital Calculation Capitalization					
	<u>Interest Rate</u>	<u>Annual Interest</u>	<u>Amount outstanding as of 12/31/2013</u>	<u>Percentage of Capital Structure</u>	
Long-Term Debt					
Liberty Utilities Company	3.53%	\$ 69,680	\$ 1,973,939		
Long-Term Debt		\$ 69,680	\$ 1,973,939	30.00%	
Short-Term Debt		\$ -		0.00%	
Total Debt	3.53%	\$ 69,680	\$ 1,973,939	30.00%	
Common Equity			\$ 4,605,858		
Common Shares Outstanding					
Paid in Capital					
Retained Earnings					
Total Common Equity			\$ 4,605,858	70.00%	
Total Capitalization			\$ 6,579,797	100.00%	